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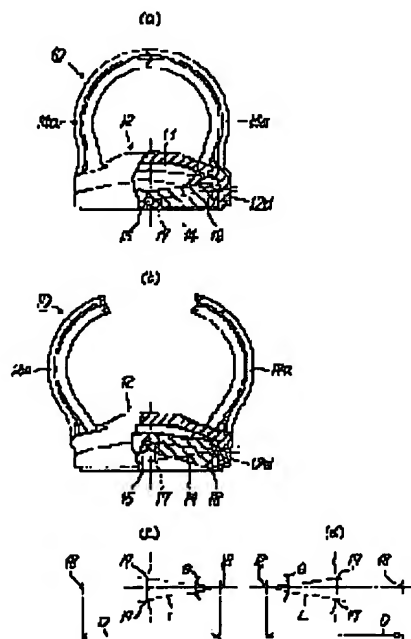
(54) BINDER

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(57) Abstract:

**PROBLEM TO BE SOLVED:** To provide a binder for easily sorting at the time of discarding by easily manufacturing and assembling with a simple structure with less number of components and easily disassembling.

**SOLUTION:** The binder 10 comprises a base plate 12 having a recess 11 and longitudinally extending, and rings 14a, 14b of a plurality of opening/closing binding members oscillatorily opposed via a plurality of cutouts formed symmetrically at both ends of a longitudinal direction of the plate 12. The rings 14a, 14b are oscillatorily contained in the recess 11 of the plate 12 and coupled integrally with two support plates 14 extending longitudinally. Further, an elastic member 15 for holding the rings 14a, 14b in an opening position and a closed position is extended between protrusion pieces 17 of the two plates 14.



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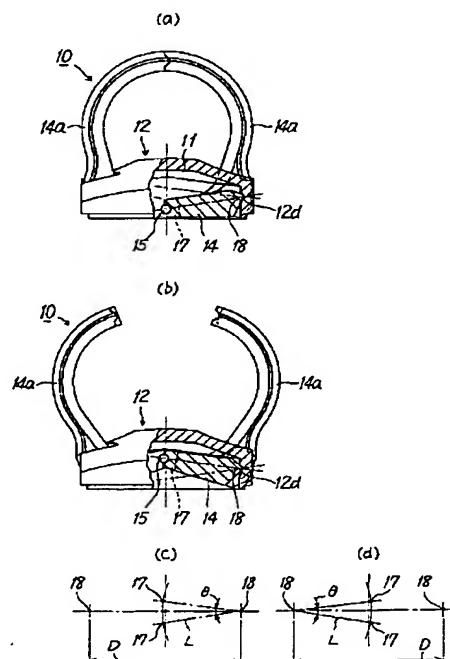
Fターム(参考) 2C017 UD13 UD21

(54)【発明の名称】 綴じ具

(57)【要約】

【課題】 部品点数が少なく、構成が簡単で製造組立が容易であり、分解が容易であるため、廃棄時の分別が容易に行える綴じ具を提供する。

【解決手段】 綴じ具10は、凹部11を有しかつ長手方向に延在する基板12と、この基板12の長手方向の両端部側に対称的に形成した複数の切欠部13を介して揺動可能に対設される複数の開閉綴じ部材であるリング部14a、14aからなり、これらのリング部14a、14aは基板12の凹部11内に揺動可能に収納されて長手方向に延在する2つの支持板14、14に一体的に連結され、さらにリング部14a、14aを開放位置および閉塞位置に保持する弾性部材15を2つの支持板14、14の突起片17、17間に張設する。



## 【特許請求の範囲】

【請求項 1】 凹部を有しかつ長手方向に延在する基板と、この基板の長手方向の両端部側に対称的に形成した複数の切欠部を介して揺動可能に対設される複数の開閉綴じ部材からなり、

これらの開閉綴じ部材は前記基板の凹部内に揺動可能に収納されて長手方向に延在する 2 つの支持板に一体的に連結され、さらに前記複数の開閉綴じ部材を開放位置および閉塞位置に保持する弾性部材を前記 2 つの支持板間に張設することを特徴とする綴じ具。

【請求項 2】 前記 2 つの支持板の長手方向対向端縁部に所定の間隔で突起片を形成し、この突起片により弾性部材が挟持されていることを特徴とする請求項 1 記載の綴じ具。

【請求項 3】 弾性部材は、ピアノ線であることを特徴とする請求項 1 または 2 記載の綴じ具。

【請求項 4】 ピانو線を除き、全て合成樹脂で構成されることを特徴とする請求項 1 乃至 3 のいずれかに記載の綴じ具。

【請求項 5】 基板の凹部両端に隣接して逆テーパ部を形成した取付孔を穿設し、前記取付孔に逆テーパ部を形成したリベットを挿入することにより前記基板を台紙に固定することを特徴とする請求項 1 乃至 4 のいずれかに記載の綴じ具。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、書類等を綴る綴じ具に関し、特に構成が簡単で製造、組立が容易な綴じ具に関する。

## 【0002】

【従来の技術】従来、例えばファイル等の背表紙部分に固定され帳票等を綴る綴じ具は、背表紙部分に固定される基板部分が金属により形成され、綴じリング部分も金属により形成され、両者を結合して相互に弾接させるばね材を含めてカシメ等により結合している。

## 【0003】

【発明が解決しようとする課題】しかしながら、前記した従来の綴じ具は金属から構成される複数の部品をカシメ等により結合しているので、製造、組立が煩雑となる問題がある。また、カシメにより各部品が結合されているので、廃棄する際に各部品ごとに分別しにくいという問題がある。

【0004】本発明は、前記問題点を解決するためになされたものであり、部品点数が少なく、部品の製造、組立が容易に行え、廃棄するときに分解が容易で分別しやすく環境対応型の綴じ具を提供することを目的とする。

## 【0005】

【課題を解決するための手段】前記の目的を達成するため 本発明に係る綴じ具は 凹部を有しかつ長手方向に

的に形成した複数の切欠部を介して揺動可能に対設される複数の開閉綴じ部材からなり、これらの開閉綴じ部材は基板の凹部内に揺動可能に収納されて長手方向に延在する 2 つの支持板に一体的に連結され、さらに複数の開閉綴じ部材を開放位置および閉塞位置に保持する弾性部材を 2 つの支持板間に張設することを特徴とする。

【0006】2 つの支持板の長手方向対向端縁部に所定の間隔で突起片を形成し、この突起片により弾性部材が挟持されているように構成することが望ましく、弾性部材はピアノ線であることが望ましく、ピアノ線を除き、全て合成樹脂で構成すると好適である。基板の凹部両端に隣接して逆テーパ部を形成した取付孔を穿設し、取付孔に逆テーパ部を形成したリベットを挿入することにより基板を台紙に固定するように構成してもよい。

【0007】前記のように構成された本発明に係る綴じ具によれば、開閉綴じ部材の支持板間に弾性部材を挟持して基板内に収納するだけで組立ができ、分解も容易に行えるため、廃棄時に部品を分別することが容易に行える。

## 【0008】

【発明の実施の形態】発明の実施の形態を図面を参照して説明する。図 1 は本発明に係る綴じ具の一実施形態の正面図、図 2 は図 1 の一部を破断した状態の側面図、図 3 は図 1 の一部を省略した底面図、図 4 (a) は図 2 の A-A 線に沿う拡大断面図、図 4 (b) は (a) の開放綴じ部材の開放状態の拡大断面図、図 4 (c) は開放綴じ部材の閉塞状態と開放状態の突起片の動作説明図、図 4 (d) は図 4 (c) の隣接する突起片の動作説明図、図 5 は支持板および開放綴じ部材の要部を示す拡大斜視図、図 6 は綴じ具とファイルの背表紙とを固定する動作説明図である。

【0009】図 1～6 において、綴じ具 10 は凹部 11 を有しかつ長手方向に延在する基板 12 と、この基板 12 の長手方向の両端部側に対称的に形成した複数の切欠部 13 を介して揺動可能に対設される複数の開閉綴じ部材であるリング部 14 a、14 a からなり、これらの開閉綴じ部材であるリング部 14 a、14 a は基板 12 の凹部 11 内に揺動可能に収納されて長手方向に延在する 2 つの支持板 14、14 に一体的に連結され、さらに 2 つのリング部 14 a、14 a を開放位置および閉塞位置に保持する弾性部材であるばね棒 15 を 2 つの支持板 14、14 間に張設している。リング部 14 a、14 a は閉塞位置において帳票を綴じる綴じリングを構成する。2 つの支持板 14、14 は基板 12 内の凹部 11 内に収納され、支持板 14、14 間にはばね棒 15 が装着される。リング部 14 a、14 a の先端は、一方はクロス型の突部が形成され、他方はクロス型の凹部が形成され、両者が閉じたときにずれない構成としてある。

【0010】基板 12 は A R S 樹脂等の比較的堅いプラ

して湾曲させながら支持板は上方向に揺動する。そして、支持板 14、14 が中間点を通過するとばね棒 15 の大きな復元力により突起片 17 を反発して支持板 14、14 を上死点側へ付勢して揺動させ上死点に保持し、開放状態となる。

【0020】このように開いた状態のリング部 14 a、14 a に帳票の綴じ孔を対応させ、リング部 14 a、14 a を指等でつまんで閉じると、支持板 14、14 は前記と反対の下方向に揺動する。このときもばね棒 15 を押圧湾曲させるため中間点まではばね棒 15 に抗しており、中間点を過ぎるとばね棒 15 の反発力により支持板 14、14 は下死点まで一気に移動する。これにより支持板 14、14 のリング部 14 a、14 a は相互に接触してばね棒 15 の弾性力により付勢された閉塞状態となる。この閉塞状態のリング部 14 a、14 a の付勢力は、ばね棒 15 の直径、エッジ部 18、18 と突起片 17 との距離を大きくすることにより強力にすることができる。

【0021】なお、開閉綴じ部材であるリング部 14 a、14 a は 2 つの例を示したが、3 つあるいは 4 つ等適宜選択できるものであり、弾性部材はピアノ線の例を示したがステンレススチール等のばね材でもよく、また、例えば平板状のばね板等、適宜の形状の弾性部材を用いることができるのは勿論である。

【0022】

【発明の効果】以上説明したように、本発明によれば、部品点数が少なく、構成が簡単で製造、組立が容易となる。また、廃棄時には分解が容易に行え、部品の分別が容易に行えるので環境に対応した綴じ具を提供できるという効果を奏する。

【図面の簡単な説明】

\* 【図 1】本発明に係る綴じ具の一実施形態の正面図である。

【図 2】図 1 の一部を破断した状態の側面図である。

【図 3】図 1 の一部を省略した底面図である。

【図 4】(a) は図 2 の A-A 線に沿う拡大断面図、(b) は (a) の開放綴じ部材の開放状態の拡大断面図、(c) は開放綴じ部材の閉塞状態と開放状態の突起片の動作説明図、(d) は (c) の隣接する突起片の動作説明図である。

10 【図 5】支持板および開放綴じ部材の要部を示す拡大斜視図である。

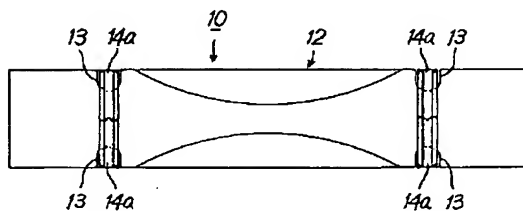
【図 6】綴じ具とファイルの背表紙とを固定する動作説明図である。

【符号の説明】

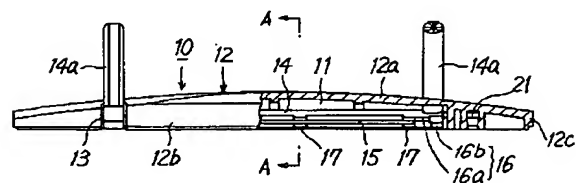
- 10 綴じ具
- 11 凹部
- 12 基板
- 13 切欠部
- 14、14 支持板
- 14 a、14 a 開閉綴じ部材（リング部）
- 15 弾性部材（ばね棒）
- 16 突部
- 17 突起片
- 18、18 エッジ部
- 19 突起部
- 20 台紙（ファイルの背表紙）
- 21、21 取付孔
- 21 a 逆テーパ部
- 22、22 リベット
- 22 a 逆テーパ部

\*

【図 1】



【図 2】



bと端面12c、12cとにより内部に凹部11が形成され、側面から上面にかけて貫通する4つの切欠部13が形成されており、切欠部13はリング部14a、14aが挿入されるものである。支持板14、14およびリング部14a、14aはポリカーボネイト樹脂等の比較的柔らかいプラスチックから一体的に形成されている。

【0011】支持板14、14の長手方向対向端縁部には、両端部に弾性部材であるばね棒15を位置決めする複数の突部16が形成され、中間部にはばね棒15を相互に挟持する複数の突起片17が形成されている。突部16は下部が切り欠かれた上突部16aと、上部が切り欠かれた下突部16bとから構成され、相互に噛み合う構成であるとともにばね棒15の端部に当接して、その移動を阻止するものである。突起片17はばね棒15の円形断面に対応する半円形の切欠き部が形成されている。2つの支持板14、14およびリング部14a、14aは同一形状をしており、複数の突起片17は相互にその中間に位置するように設定されている。ばね棒15は直径が1mm程度のピアノ線を切断して構成されている。

【0012】支持板14、14の外方には基板12面に対接するエッジ部18、18が長手方向に突設されている。このエッジ部18、18は支持板14、14が基板12に対して揺動するときの支点となるものであり、このエッジ部に対応する基板12内面には溝部12d、12dが形成されている。支持板の両端面には基板12の仕切壁の内面に対接する突起部19、19が突設されており、支持板14、14が基板12に対して揺動するときの接触抵抗を小さくするものである。

【0013】図4に示されるように、支持板14、14のエッジ部18、18と突起片17、17の半円形の切欠き部の中心との距離Lは、対向する2つのエッジ部間18、18の距離Dの $1/2$ より大きく設定されている。すなわち、図4(c)のように右の突起片の揺動半径である距離Lは、中心線を左側に超えており、図4(d)のように左の突起片の揺動半径である距離Lは、中心線を右側に超えている。このため、図3に示されるように基板12の凹部11に支持板14、14が嵌合された状態では、ばね棒15は波形に湾曲され、直線状に復帰しようとする復元力で支持板14、14は相互に反発するように構成されている。ばね棒15は柔らかく、しなりやすいので支持板14、14を保持するのに適している。

【0014】リング部14a、14aが開いて支持板14、14の上面が基板12の内面に接触する上死点の状態(図4(b)参照)と、リング部14a、14aが閉じて支持板14、14が下方に移動した下死点の状態(図4(a)参照)との間の角度 $\theta$ の範囲で支持板14、14は揺動するが、中間点では突起片17が接近することによりばね棒15はさらに波形に変形され、より

大きい復元力で反発される構成となっているため、支持板14、14は中間点で停止することなく上死点または下死点まで移動するように位置決めされる構成である。支持板14、14の上死点の状態は支持板のリング部14a、14aの開放位置に対応し、支持板14、14の下死点の状態は支持板のリング部14a、14aの閉塞位置に対応している。

【0015】基板12の裏面の両側部には、この綴じ具10を台紙であるファイル等の背表紙20に固定するための取付孔21、21が穿設されている。この取付孔は図6に示されるように、入口の面取り部に連続する直線部、逆テーパ部21a、直線部を形成してあり、逆テーパ部のテーパは5乃至10度に設定されている。取付孔21、21に嵌合されるリベット22、22は樹脂より形成され、取付孔の逆テーパ部に対応する逆テーパ部22aが形成されている。ファイルの背表紙20の貫通孔に綴じ具10の取付孔21、21を対応させてリベット22、22を圧入状態に挿入することにより、綴じ具10をファイルに固定する構成である。

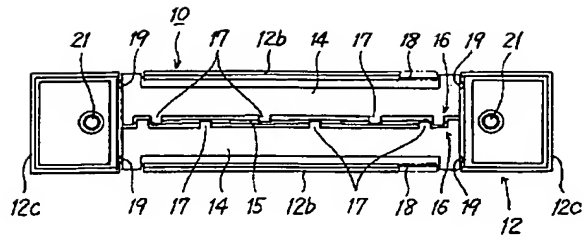
【0016】本実施形態の綴じ具10は前記した構成であり、以下動作について説明する。この綴じ具10は2つのリング部14a、14aを開いた状態で支持板14、14の突起片17間にはばね棒15を位置させ、この組み合わせた状態で基板12の切欠部13にリング部14a、14aを挿入させる。そして、支持板14、14を基板12に挿入し、エッジ部18、18を溝部12d、12dに係合させる。このような単純な操作により綴じ具10を組み立てることができる。

【0017】また、綴じ具10を分解するときは、リング部14a、14aを開いた状態で基板12に対して下方に押圧すると、支持板のエッジ部18、18が基板12の溝部12d、12dから外れて、基板12、支持板14、14、ばね棒15に分解することができる。従って、綴じ具10を廃棄するときは、金属、プラスチックに容易に分別することができる。

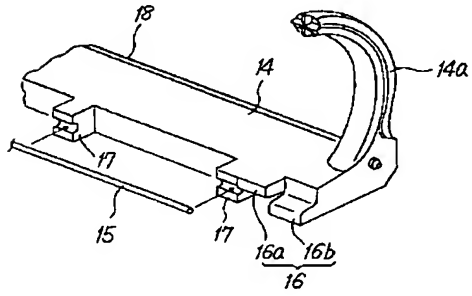
【0018】綴じ具10をファイルの背表紙20に固定するときは、背表紙の貫通孔に綴じ具の取付孔21、21を対応させて、リベット22、22を圧入状態に挿入するだけの操作で行え、極めて容易に固定することができる。リベット22、22の逆テーパ部22aが取付孔21の逆テーパ部21aに挿入されて強固に結合してファイルの背表紙20に綴じ具10は固定される。また、ファイルより綴じ具10を外すときは、リベット22、22の頭部と背表紙20の間に例えばドライバの先等を挿入させてリベット22、22を外すだけで行える。

【0019】この綴じ具10に書類等を綴じ込むときは、指等によりリング部14a、14aの先端をつかんで広げると、支持板14、14のエッジ部18、18と基板12の溝部12d、12dとを支点として支持板14、14は揺動し、ばね棒15を突起片17により押圧

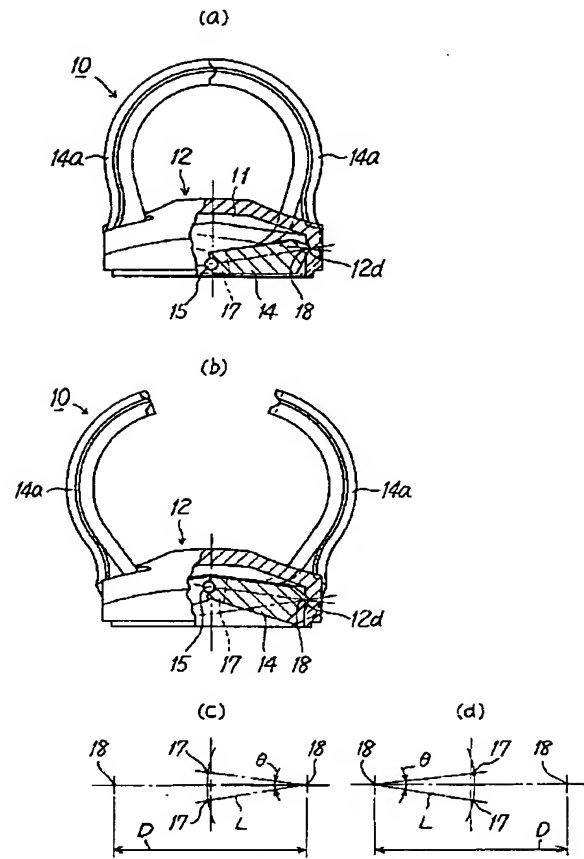
【図3】



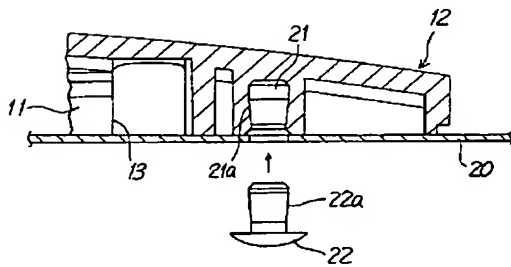
【図5】



【図4】



【図6】



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TECHNICAL FIELD

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[Field of the Invention] About the binding implement which spells a document etc., this invention is simple for especially a configuration, and relates to a binding implement with easy manufacture and assembly.

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PRIOR ART

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[Description of the Prior Art] The substrate part fixed to a back cover part was formed with the metal, and has combined with caulking etc. the binding implement which is fixed to back cover parts, such as the former, for example, a file etc., and spells a document etc. including the spring material for which a binding ring part is also formed with a metal, combines both, and is made to \*\*\*\* them mutually.

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[Translation done.]



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TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention] However, since the above mentioned conventional binding implement has combined with caulking etc. two or more components which consist of metals, it has the problem from which manufacture and assembly become complicated. Moreover, since each part article is combined with caulking, in case it discards, there is a problem of being hard to classify for every each part article.

[0004] It is made in order that this invention may solve said trouble, there are few components mark, manufacture of components and assembly can be performed easily, and when discarding, decomposition aims at offering an eco-friendly binding implement that it is easy and easy to classify.

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

[Drawing 1] It is the front view of 1 operation gestalt of the binding implement concerning this invention.

[Drawing 2] It is a side elevation in the condition of having fractured a part of drawing 1 .

[Drawing 3] It is the bottom view which omitted a part of drawing 1 .

[Drawing 4] The expanded sectional view to which (a) meets the A-A line of drawing 2 , and (b) are explanatory views of a projection piece of operation in which, as for the expanded sectional view of the open condition of the open binding member of (a), and (c), the explanatory view of the projection piece of the state of obstruction of an open binding member and an open condition of operation adjoins, and, as for (d), (c) adjoins.

[Drawing 5] It is the amplification perspective view showing the important section of a support plate and an open binding member.

[Drawing 6] It is the explanatory view of operation which fixes a binding implement and the back cover of a file.

### [Description of Notations]

10 Binding Implement

11 Crevice

12 Substrate

13 Notch

14 14 Support plate

14a, 14a Closing motion binding member (ring section)

15 Elastic Member (Spring Rod)

16 Projected Part

17 Projection Piece

18 18 Edge section

19 Height

20 Pasteboard (Back Cover of File)

21 21 Mounting hole

21a Back taper section

22 22 Rivet

22a Back taper section

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MEANS

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[Means for Solving the Problem] In order to attain the aforementioned object, the binding implement concerning this invention It consists of two or more closing motion binding members opposite-\*\*(ed) rockable through the substrate which has a crevice and extends in a longitudinal direction, and two or more notches symmetrically formed in the both-ends side of the longitudinal direction of this substrate. It is characterized by these closing motion binding members stretching the elastic member which is connected with two support plates which are contained rockable in the crevice of a substrate and extend in a longitudinal direction in one, and holds further two or more closing motion binding members in an open position and a lock out location between two support plates.

[0006] It is desirable to constitute as a projection piece is formed in the longitudinal direction opposite edge section of two support plates at the predetermined spacing and the elastic member is pinched by this projection piece, and if it is desirable that it is piano wire as for an elastic member and it constitutes it from synthetic resin altogether except for piano wire, it is suitable. The mounting hole which adjoined the crevice ends of a substrate and formed the back taper section may be drilled, and by inserting the rivet in which the back taper section was formed to the mounting hole, you may constitute so that a substrate may be fixed to pasteboard.

[0007] Since according to the binding implement concerning this invention constituted as mentioned above assembly is possible and decomposition can also be easily performed only by pinching an elastic member between the support plates of a closing motion binding member, and containing in a substrate, it can perform classifying components at the time of abolition easily.

[0008]

[Embodiment of the Invention] The gestalt of implementation of invention is explained with reference to a drawing. The front view of 1 operation gestalt of the binding implement which drawing 1 requires for this invention, the side elevation in the condition that drawing 2 fractured a part of drawing 1 , The bottom view where drawing 3 R> 3 omitted a part of drawing 1 , the expanded sectional view to which drawing 4 (a) meets the A-A line of drawing 2 , The expanded sectional view of the open condition of the open binding member of (a) and drawing 4 (c) drawing 4 (b) The explanatory view of the projection piece of the state of obstruction of an open binding member, and an open condition of operation, The explanatory view of a projection piece of operation in which drawing 4 (c) adjoins, the amplification perspective view in which drawing 5 shows the important section of a support plate and an open binding member, and drawing 6 of drawing 4 R> 4 (d) are explanatory views of operation which fix a binding implement and the back cover of a file.

[0009] The substrate 12 which the binding implement 10 has a crevice 11, and extends in a longitudinal direction in drawing 1 -6, Ring section 14a which is two or more closing motion binding members opposite-\*\*(ed) rockable through two or more notches 13 symmetrically formed in the both-ends side of the longitudinal direction of this substrate 12, Consist of 14a and the ring sections 14a and 14a which are these closing motion binding members are connected with two support plates 14 and 14 which are contained rockable in the crevice 11 of a substrate 12, and extend in a longitudinal direction in one. The spring rod 15 which is the elastic member which holds the two more ring sections 14a and 14a in an open position and a lock out location is stretched between two support plates 14 and 14. The ring sections 14a and 14a constitute the binding ring which files a document in a lock out location. Two support plates 14 and 14 are contained in the crevice 11 in a substrate 12, and it is equipped with the spring rod 15 between a support plate 14 and 14. As for the head of the ring sections 14a and 14a, the projected part of a cross mold is formed, as for one side, the crevice of a cross mold is formed and another side is considered as the configuration which does not shift

when both close.

[0010] A substrate 12 is formed from comparatively hard plastics, such as ABS plastics, a crevice 11 is formed in the interior of top-face 12a, side faces 12b and 12b, and end faces 12c and 12c, four notches 13 penetrated applying are formed in the top face from the side face, and, as for a notch 13, the ring sections 14a and 14a are inserted. Support plates 14 and 14 and the ring sections 14a and 14a are formed in one from comparatively soft plastics, such as polycarbonate resin.

[0011] Two or more projected parts 16 which position the spring rod 15 which is an elastic member are formed in both ends, and two or more projection pieces 17 which pinch the spring rod 15 mutually are formed in pars intermedia at the longitudinal direction opposite edge section of support plates 14 and 14. A projected part 16 consists of projected part after the lower part cut and lacks 16a, and bottom projected part 16b which the upper part cut and lacked, it contacts the edge of the spring rod 15 while it is the configuration of gearing mutually, and it prevents the migration. The notch of the semicircle corresponding to the circular cross section of the spring rod 15 in the projection piece 17 is formed. Two support plates 14 and 14 and the ring sections 14a and 14a are carrying out the same configuration, and two or more projection pieces 17 are set up so that it may be mutually located in the medium. The spring rod 15 cuts the piano wire whose diameter is about 1mm, and is constituted.

[0012] The edge sections 18 and 18 which opposite-\*\* to a way at the 12th page of a substrate protrude on the longitudinal direction outside support plates 14 and 14. These edge sections 18 and 18 serve as the supporting point in case support plates 14 and 14 rock to a substrate 12, and Slots 12d and 12d are formed in substrate 12 inner surface corresponding to this edge section. The heights 19 and 19 which opposite-\*\* protrude on the inner surface of the bridge wall of a substrate 12 in the ends side of a support plate, and contact resistance in case support plates 14 and 14 rock to a substrate 12 is made small.

[0013] As shown in drawing 4, the distance L with the core of the edge sections 18 and 18 of support plates 14 and 14 and the notch of the semicircle of the projection pieces 17 and 17 is set up more greatly than one half of the distance D between [ 18 and 18 ] the two edge sections which counter. That is, the distance L which is the splash radius of a right projection piece like drawing 4 (c) is over the center line on left-hand side, and the distance L which is the splash radius of a left projection piece like drawing 4 (d) is over the center line on right-hand side. For this reason, as shown in drawing 3, where fitting of the support plates 14 and 14 is carried out to the crevice 11 of a substrate 12, the spring rod 15 curves to a wave, and support plates 14 and 14 consist of stability which is going to return in the shape of a straight line so that it may oppose mutually. The spring rod 15 is soft, and since it tends to become, it is suitable for holding support plates 14 and 14.

[0014] The condition of a top dead center that the ring sections 14a and 14a open, and the top face of support plates 14 and 14 contacts the inner surface of a substrate 12 (refer to drawing 4 (b)), Although support plates 14 and 14 are rocked in the range of the include angle theta between the conditions (refer to drawing 4 (a)) of the bottom dead point which the ring sections 14a and 14a closed, and support plates 14 and 14 moved caudad In a midpoint, since it has composition which the spring rod 15 deforms into a wave further, and is opposed by larger stability when the projection piece 17 approaches, support plates 14 and 14 are configurations positioned so that it may move to a top dead center or a bottom dead point, without stopping by the midpoint. The condition of the top dead center of support plates 14 and 14 corresponds to the open position of the ring sections 14a and 14a of a support plate, and the condition of the bottom dead point of support plates 14 and 14 supports the lock out location of the ring sections 14a and 14a of a support plate.

[0015] The mounting holes 21 and 21 for fixing this binding implement 10 to the back covers 20, such as a file which is pasteboard, are drilled in the both-sides section of the rear face of a substrate 12. As this mounting hole is shown in drawing 6, the bay which follows the chamfer of an inlet port, back taper section 21a, and a bay are formed, and the taper of the back taper section is set as 5 thru/ or 10 degrees. The rivets 22 and 22 by which fitting is carried out are formed from resin, and back taper section 22a corresponding to the back taper section of a mounting hole is formed in mounting holes 21 and 21. It is the configuration which fixes the binding implement 10 to a file by filing to the breakthrough of the back cover 20 of a file, making the mounting holes 21 and 21 of an ingredient 10 correspond, and inserting rivets 22 and 22 in a press fit condition.

[0016] The binding implement 10 of this operation gestalt is the above mentioned configuration, and explains actuation below. This binding implement 10 locates the spring rod 15 between the projection pieces 17 of support plates 14 and 14, where the two ring sections 14a and 14a are opened, and it makes the ring sections 14a and 14a insert in the notch

13 of a substrate 12 in this condition of having combined. And support plates 14 and 14 are inserted in a substrate 12, and the edge sections 18 and 18 are made to engage with Slots 12d and 12d. It can file by such simple actuation, and an ingredient 10 can be assembled and carried out.

[0017] Moreover, if it presses caudad to a substrate 12 where the ring sections 14a and 14a are opened when decomposing the binding implement 10, the edge sections 18 and 18 of a support plate can separate from the slots 12d and 12d of a substrate 12, and can decompose into a substrate 12, support plates 14 and 14, and the spring rod 15.

Therefore, when discarding the binding implement 10, it can classify easily to a metal and plastics.

[0018] When the binding implement 10 is fixed to the back cover 20 of a file, it can file to the breakthrough of a back cover, the mounting holes 21 and 21 of an ingredient can be made to be able to respond, and it can carry out only by the actuation which inserts rivets 22 and 22 in a press fit condition, and can fix very easily. Back taper section 22a of rivets 22 and 22 is inserted in back taper section 21a of a mounting hole 21, and it joins together firmly, and files on the back cover 20 of a file, and an ingredient 10 is fixed. Moreover, when filing from a file and removing an ingredient 10, it can carry out only by making the point of a driver etc. insert between the head of rivets 22 and 22, and the back cover 20, and removing rivets 22 and 22.

[0019] If the head of the ring sections 14a and 14a is held with a finger etc. and it extends when filing a document etc. in this binding implement 10, by using the edge sections 18 and 18 of support plates 14 and 14, and the slots 12d and 12d of a substrate 12 as the supporting point, support plates 14 and 14 are rocked, and they will rock a support plate upward, pressing the spring rod 15 by the projection piece 17, and incurvating it. And if support plates 14 and 14 pass a midpoint, they repel the projection piece 17 according to the big stability of the spring rod 15, make support plates 14 and 14 energize and rock to a top dead center side, hold to a top dead center, and will be in an open condition.

[0020] Thus, the binding hole of a document is made to correspond to the ring sections 14a and 14a in the condition of having opened, and if the ring sections 14a and 14a are pinched and closed with a finger etc., support plates 14 and 14 will be rocked to down [ of the above and objection ]. In order to carry out the press bow of the spring rod 15 also at this time, the spring rod 15 is resisted, and if a midpoint passes over a midpoint, support plates 14 and 14 will move it at a stretch to a bottom dead point according to the repulsive force of the spring rod 15. Thereby, the ring sections 14a and 14a of support plates 14 and 14 will be in the state of obstruction which contacted mutually and was energized by the elastic force of the spring rod 15. The energization force of the ring sections 14a and 14a of this state of obstruction can be made powerful by enlarging the diameter of the spring rod 15, and distance of the edge sections 18 and 18 and the projection piece 17.

[0021] In addition, although the ring sections 14a and 14a which are closing motion binding members show two examples, they can choose three, four, etc. suitably, and although the elastic member showed the example of piano wire, spring material, such as a stainless steel, is sufficient as it, and it is needless to say [ the sections ] that the elastic member of proper configurations, such as a plate-like leaf, can be used.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] About the binding implement which spells a document etc., this invention is simple for especially a configuration, and relates to a binding implement with easy manufacture and assembly.

[0002]

[Description of the Prior Art] The substrate part fixed to a back cover part was formed with the metal, and has combined with caulking etc. the binding implement which is fixed to back cover parts, such as the former, for example, a file etc., and spells a document etc. including the spring material for which a binding ring part is also formed with a metal, combines both, and is made to \*\*\*\* them mutually.

[0003]

[Problem(s) to be Solved by the Invention] However, since the above mentioned conventional binding implement has combined with caulking etc. two or more components which consist of metals, it has the problem from which manufacture and assembly become complicated. Moreover, since each part article is combined with caulking, in case it discards, there is a problem of being hard to classify for every each part article.

[0004] It is made in order that this invention may solve said trouble, there are few components mark, manufacture of components and assembly can be performed easily, and when discarding, decomposition aims at offering an eco-friendly binding implement that it is easy and easy to classify.

[0005]

[Means for Solving the Problem] In order to attain the aforementioned object, the binding implement concerning this invention It consists of two or more closing motion binding members opposite-\*\*(ed) rockable through the substrate which has a crevice and extends in a longitudinal direction, and two or more notches symmetrically formed in the both-ends side of the longitudinal direction of this substrate. It is characterized by these closing motion binding members stretching the elastic member which is connected with two support plates which are contained rockable in the crevice of a substrate and extend in a longitudinal direction in one, and holds further two or more closing motion binding members in an open position and a lock out location between two support plates.

[0006] It is desirable to constitute as a projection piece is formed in the longitudinal direction opposite edge section of two support plates at the predetermined spacing and the elastic member is pinched by this projection piece, and if it is desirable that it is piano wire as for an elastic member and it constitutes it from synthetic resin altogether except for piano wire, it is suitable. The mounting hole which adjoined the crevice ends of a substrate and formed the back taper section may be drilled, and by inserting the rivet in which the back taper section was formed to the mounting hole, you may constitute so that a substrate may be fixed to pasteboard.

[0007] Since according to the binding implement concerning this invention constituted as mentioned above assembly is possible and decomposition can also be easily performed only by pinching an elastic member between the support plates of a closing motion binding member, and containing in a substrate, it can perform classifying components at the time of abolition easily.

[0008]

[Embodiment of the Invention] The gestalt of implementation of invention is explained with reference to a drawing. The front view of 1 operation gestalt of the binding implement which drawing 1 requires for this invention, the side elevation in the condition that drawing 2 fractured a part of drawing 1 , The bottom view where drawing 3 R> 3

omitted a part of drawing 1, the expanded sectional view to which drawing 4 (a) meets the A-A line of drawing 2, The expanded sectional view of the open condition of the open binding member of (a) and drawing 4 (c) drawing 4 (b) The explanatory view of the projection piece of the state of obstruction of an open binding member, and an open condition of operation, The explanatory view of a projection piece of operation in which drawing 4 (c) adjoins, the amplification perspective view in which drawing 5 shows the important section of a support plate and an open binding member, and drawing 6 of drawing 4 R> 4 (d) are explanatory views of operation which fix a binding implement and the back cover of a file.

[0009] The substrate 12 which the binding implement 10 has a crevice 11, and extends in a longitudinal direction in drawing 1 -6, Ring section 14a which is two or more closing motion binding members opposite-\*\*(ed) rockable through two or more notches 13 symmetrically formed in the both-ends side of the longitudinal direction of this substrate 12, Consist of 14a and the ring sections 14a and 14a which are these closing motion binding members are connected with two support plates 14 and 14 which are contained rockable in the crevice 11 of a substrate 12, and extend in a longitudinal direction in one. The spring rod 15 which is the elastic member which holds the two more ring sections 14a and 14a in an open position and a lock out location is stretched between two support plates 14 and 14. The ring sections 14a and 14a constitute the binding ring which files a document in a lock out location. Two support plates 14 and 14 are contained in the crevice 11 in a substrate 12, and it is equipped with the spring rod 15 between a support plate 14 and 14. As for the head of the ring sections 14a and 14a, the projected part of a cross mold is formed, as for one side, the crevice of a cross mold is formed and another side is considered as the configuration which does not shift when both close.

[0010] A substrate 12 is formed from comparatively hard plastics, such as ABS plastics, a crevice 11 is formed in the interior of top-face 12a, side faces 12b and 12b, and end faces 12c and 12c, four notches 13 penetrated applying are formed in the top face from the side face, and, as for a notch 13, the ring sections 14a and 14a are inserted. Support plates 14 and 14 and the ring sections 14a and 14a are formed in one from comparatively soft plastics, such as polycarbonate resin.

[0011] Two or more projected parts 16 which position the spring rod 15 which is an elastic member are formed in both ends, and two or more projection pieces 17 which pinch the spring rod 15 mutually are formed in pars intermedia at the longitudinal direction opposite edge section of support plates 14 and 14. A projected part 16 consists of projected part after the lower part cut and lacks 16a, and bottom projected part 16b which the upper part cut and lacked, it contacts the edge of the spring rod 15 while it is the configuration of gearing mutually, and it prevents the migration. The notch of the semicircle corresponding to the circular cross section of the spring rod 15 in the projection piece 17 is formed. Two support plates 14 and 14 and the ring sections 14a and 14a are carrying out the same configuration, and two or more projection pieces 17 are set up so that it may be mutually located in the medium. The spring rod 15 cuts the piano wire whose diameter is about 1mm, and is constituted.

[0012] The edge sections 18 and 18 which opposite-\*\*( to a way at the 12th page of a substrate protrude on the longitudinal direction outside support plates 14 and 14. These edge sections 18 and 18 serve as the supporting point in case support plates 14 and 14 rock to a substrate 12, and Slots 12d and 12d are formed in substrate 12 inner surface corresponding to this edge section. The heights 19 and 19 which opposite-\*\*( protrude on the inner surface of the bridge wall of a substrate 12 in the ends side of a support plate, and contact resistance in case support plates 14 and 14 rock to a substrate 12 is made small.

[0013] As shown in drawing 4, the distance L with the core of the edge sections 18 and 18 of support plates 14 and 14 and the notch of the semicircle of the projection pieces 17 and 17 is set up more greatly than one half of the distance D between [ 18 and 18 ] the two edge sections which counter. That is, the distance L which is the splash radius of a right projection piece like drawing 4 (c) is over the center line on left-hand side, and the distance L which is the splash radius of a left projection piece like drawing 4 (d) is over the center line on right-hand side. For this reason, as shown in drawing 3, where fitting of the support plates 14 and 14 is carried out to the crevice 11 of a substrate 12, the spring rod 15 curves to a wave, and support plates 14 and 14 consist of stability which is going to return in the shape of a straight line so that it may oppose mutually. The spring rod 15 is soft, and since it tends to become, it is suitable for holding support plates 14 and 14.

[0014] The condition of a top dead center that the ring sections 14a and 14a open, and the top face of support plates 14 and 14 contacts the inner surface of a substrate 12 (refer to drawing 4 (b)), Although support plates 14 and 14 are rocked in the range of the include angle theta between the conditions (refer to drawing 4 (a)) of the bottom dead point



which the ring sections 14a and 14a closed, and support plates 14 and 14 moved caudad In a midpoint, since it has composition which the spring rod 15 deforms into a wave further, and is opposed by larger stability when the projection piece 17 approaches, support plates 14 and 14 are configurations positioned so that it may move to a top dead center or a bottom dead point, without stopping by the midpoint. The condition of the top dead center of support plates 14 and 14 corresponds to the open position of the ring sections 14a and 14a of a support plate, and the condition of the bottom dead point of support plates 14 and 14 supports the lock out location of the ring sections 14a and 14a of a support plate.

[0015] The mounting holes 21 and 21 for fixing this binding implement 10 to the back covers 20, such as a file which is pasteboard, are drilled in the both-sides section of the rear face of a substrate 12. As this mounting hole is shown in drawing 6, the bay which follows the chamfer of an inlet port, back taper section 21a, and a bay are formed, and the taper of the back taper section is set as 5 thru/or 10 degrees. The rivets 22 and 22 by which fitting is carried out are formed from resin, and back taper section 22a corresponding to the back taper section of a mounting hole is formed in mounting holes 21 and 21. It is the configuration which fixes the binding implement 10 to a file by filing to the breakthrough of the back cover 20 of a file, making the mounting holes 21 and 21 of an ingredient 10 correspond, and inserting rivets 22 and 22 in a press fit condition.

[0016] The binding implement 10 of this operation gestalt is the above mentioned configuration, and explains actuation below. This binding implement 10 locates the spring rod 15 between the projection pieces 17 of support plates 14 and 14, where the two ring sections 14a and 14a are opened, and it makes the ring sections 14a and 14a insert in the notch 13 of a substrate 12 in this condition of having combined. And support plates 14 and 14 are inserted in a substrate 12, and the edge sections 18 and 18 are made to engage with Slots 12d and 12d. It can file by such simple actuation, and an ingredient 10 can be assembled and carried out.

[0017] Moreover, if it presses caudad to a substrate 12 where the ring sections 14a and 14a are opened when decomposing the binding implement 10, the edge sections 18 and 18 of a support plate can separate from the slots 12d and 12d of a substrate 12, and can decompose into a substrate 12, support plates 14 and 14, and the spring rod 15. Therefore, when discarding the binding implement 10, it can classify easily to a metal and plastics.

[0018] When the binding implement 10 is fixed to the back cover 20 of a file, it can file to the breakthrough of a back cover, the mounting holes 21 and 21 of an ingredient can be made to be able to respond, and it can carry out only by the actuation which inserts rivets 22 and 22 in a press fit condition, and can fix very easily. Back taper section 22a of rivets 22 and 22 is inserted in back taper section 21a of a mounting hole 21, and it joins together firmly, and files on the back cover 20 of a file, and an ingredient 10 is fixed. Moreover, when filing from a file and removing an ingredient 10, it can carry out only by making the point of a driver etc. insert between the head of rivets 22 and 22, and the back cover 20, and removing rivets 22 and 22.

[0019] If the head of the ring sections 14a and 14a is held with a finger etc. and it extends when filing a document etc. in this binding implement 10, by using the edge sections 18 and 18 of support plates 14 and 14, and the slots 12d and 12d of a substrate 12 as the supporting point, support plates 14 and 14 are rocked, and they will rock a support plate upward, pressing the spring rod 15 by the projection piece 17, and incurvating it. And if support plates 14 and 14 pass a midpoint, they repel the projection piece 17 according to the big stability of the spring rod 15, make support plates 14 and 14 energize and rock to a top dead center side, hold to a top dead center, and will be in an open condition.

[0020] Thus, the binding hole of a document is made to correspond to the ring sections 14a and 14a in the condition of having opened, and if the ring sections 14a and 14a are pinched and closed with a finger etc., support plates 14 and 14 will be rocked to down [ of the above and objection ]. In order to carry out the press bow of the spring rod 15 also at this time, the spring rod 15 is resisted, and if a midpoint passes over a midpoint, support plates 14 and 14 will move it at a stretch to a bottom dead point according to the repulsive force of the spring rod 15. Thereby, the ring sections 14a and 14a of support plates 14 and 14 will be in the state of obstruction which contacted mutually and was energized by the elastic force of the spring rod 15. The energization force of the ring sections 14a and 14a of this state of obstruction can be made powerful by enlarging the diameter of the spring rod 15, and distance of the edge sections 18 and 18 and the projection piece 17.

[0021] In addition, although the ring sections 14a and 14a which are closing motion binding members show two examples, they can choose three, four, etc. suitably, and although the elastic member showed the example of piano wire, spring material, such as a stainless steel, is sufficient as it, and it is needless to say [ the sections ] that the elastic member of proper configurations, such as a plate-like leaf, can be used.



[0022]

[Effect of the Invention] According to this invention, as explained above, there are few components mark, and a configuration is easy and becomes easy [ manufacture and assembly ]. Moreover, at the time of abolition, it can decompose easily, and since components can be classified easily, it files and the effectiveness corresponding to an environment that an ingredient can be offered is done so.

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[Translation done.]

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CLAIMS

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[Claim(s)]

[Claim 1] It consists of two or more closing motion binding members opposite-\*\*(ed) rockable through the substrate which has a crevice and extends in a longitudinal direction, and two or more notches symmetrically formed in the both ends side of the longitudinal direction of this substrate. These closing motion binding members are binding implements characterized by stretching the elastic member which is connected with two support plates which are contained rockable in the crevice of said substrate and extend in a longitudinal direction in one, and holds said two or more closing motion binding members in an open position and a lock out location further between said two support plates.

[Claim 2] The binding implement according to claim 1 characterized by forming a projection piece in the longitudinal direction opposite edge section of said two support plates at the predetermined spacing, and the elastic member being pinched by this projection piece.

[Claim 3] An elastic member is a binding implement according to claim 1 or 2 characterized by being piano wire.

[Claim 4] The binding implement according to claim 1 to 3 characterized by all consisting of synthetic resin except for piano wire.

[Claim 5] The binding implement according to claim 1 to 4 characterized by fixing said substrate to pasteboard by inserting the rivet which drilled the mounting hole which adjoined the crevice ends of a substrate and formed the back taper section, and formed the back taper section in said mounting hole.

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[Translation done.]